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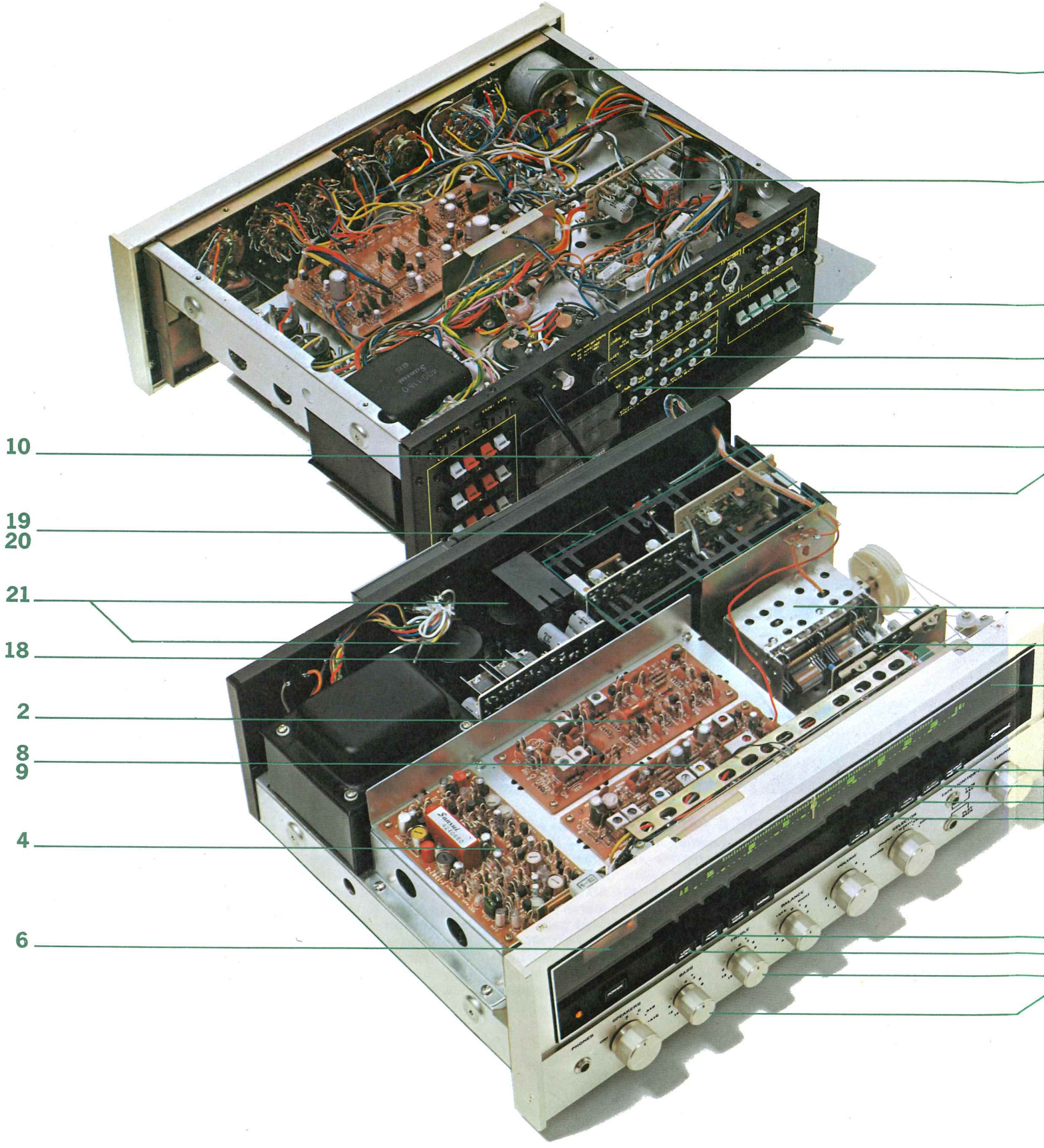
SANSUI SIX

AM/FM SOLID STATE STEREO RECEIVER Designed to offer tremendous versatility while at the same time respecting the audiophile's budget, Sansui's SIX incorporates the same fine tuner/amplifier characteristics as its more expensive counterparts, the legendary EIGHT and SEVEN. For this reason alone, the SIX can take its place among the very finest of all medium powered stereo receivers, and it is, by anyone's audio standards, a sophisticated package of value. Designed especially to reflect tonal quality, the SIX offers a variety of advanced features incorporating the latest electronics circuitry and solid state achievements. Among them: a sensitive FM front end utilizing an MOS FET and a 4-gang tuning capacitor, a highly selective FM IF amplifier with six ceramic filters and an IC, an FM multiplex circuit with a switching circuit employing four choice diodes and LC type carrier leak filter, a signal strength meter, a two-stage AM AGC circuit, a three-stage direct-coupled low-noise equalizer, a completely direct-coupled OCL pure complementary power amplifier with a constant-current driver stage, and a newly designed relay-equipped protection circuit. For the utmost in versatility—a keynote of all Sansui stereo receivers—the SIX offers provisions for connecting even new innovations such as a noise reduction adaptor—the latest Dolby, if you choose—and a 4-channel adaptor to upgrade your 2-channel system into a 4-channel unit at a later date. Everything considered, the SIX just might be the stereo value of the year. From stereo's company of the moment—Sansui.

Sansui

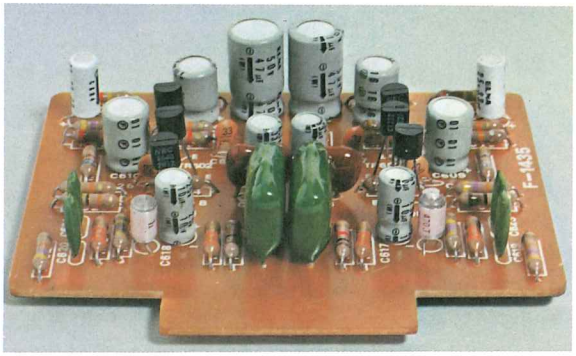
New standards in a medium-powered receiver: Sansui's SIX.



PREAMPLIFIER SECTION

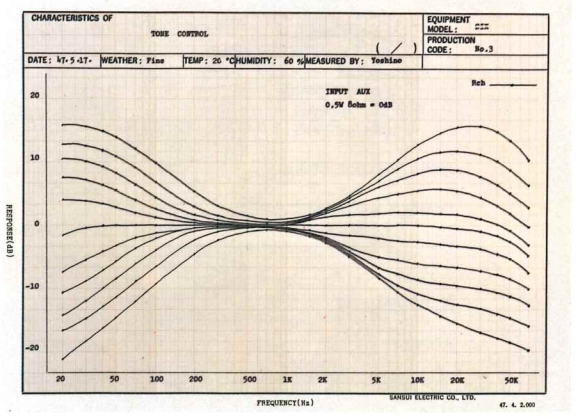
12 THREE-STAGE DIRECT-COUPLED LOW-NOISE EQUALIZER:

The SIX's equalizer amplifier is a three-stage direct-coupled system employing three carefully selected low-noise silicon transistors in a unique PNP-NPN-PNP combination. This circuitry realizes excellent linearity and an almost identical facsimile of the RIAA equalizer curve. Other virtues of this feature are a wide dynamic range, high stability, low distortion and a high signal-to-noise ratio.



13 DOUBLE TONE CONTROLS:

Another expensive and valuable feature of the SIX is the low-distortion two-stage E-B NF (emitter-to-base negative feedback) tone control providing two tone controls—for bass and treble. Each of these rotary controls allows for adjustment of the amplifier's response curve in the respective range of ±15dB in steps of 3dB each.



14 PERMITS USE OF TWO TAPE DECKS:

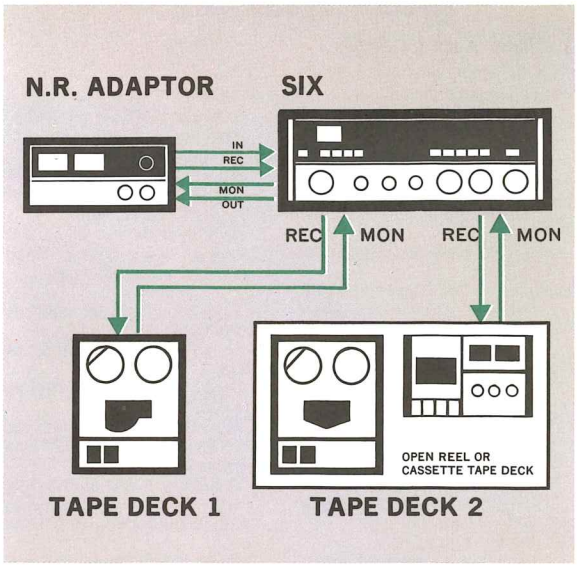
The SIX is equipped with a pair of tape monitor circuits, one of which is provided both with rear-panel pin-jack terminals and front-panel phone-type jacks. This permits you to connect two tape decks and record, playback or monitor on either. Further, by the use of the new TAPE MONITOR switch, a recorded tape can be copied from one deck to the other. Monitoring a recording, as it is being made, is of course possible on either tape deck.

15 CONNECTS A 4-CHANNEL ADAPTOR:

Should you choose to upgrade the SIX from 2-channel to 4-channel at a later date, you'll discover a specialized set of terminals and a switch stand ready to connect a 4-channel rear amplifier or adapter. These terminals mean you won't have to disconnect a tape deck when you hook-up the adapter.

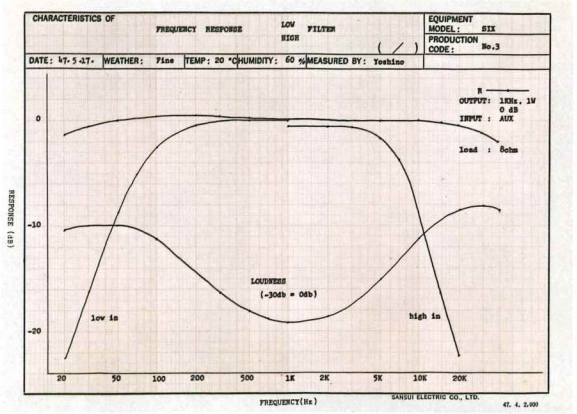
16 CONNECTS NOISE REDUCTION ADAPTOR:

Another innovation of the SIX, one that is rarely found on other medium-priced and powered receivers, is the terminals for connecting a noise reduction adaptor—such as the latest Dolby System. This type of system, of course, eliminates annoying hiss and noise that has up until recently been considered unavoidable in tape recording and playback. Again, with the noise reduction adaptor terminal, you may bypass disconnecting your tape deck to use the adaptor.



17 NEGATIVE FEEDBACK HIGH AND LOW FILTERS:

The SIX is complete with emitter-follower negative feedback high and low filter circuits utilizing transistors designed exclusively for this purpose. These filter circuits boast a sharp 12dB/oct. cutoff characteristic.



18 MINIMUM DISTORTION AT MAXIMUM RATED INPUT:

An exceptionally high DC supply voltage of 34V, stabilized by a constant-voltage power supply equipped with a 1,000μF big-capacity capacitor and a ripple filter, is applied to the equalizer and tone control circuits to provide for a very wide dynamic range. Sound does not distort even when the input signals are low. A further reminder that the SIX has been designed totally for tone quality.

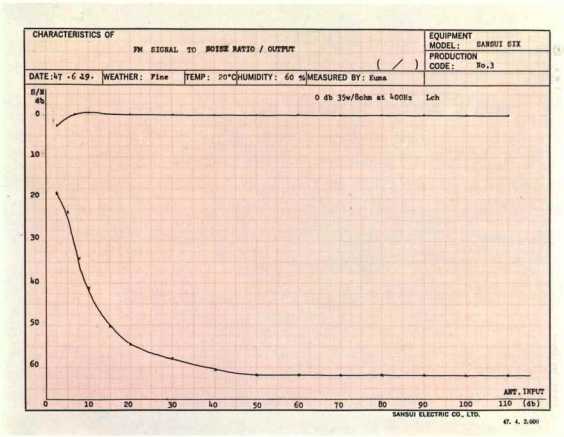
TUNER SECTION

1 SENSITIVE FM FRONTEND WITH DUAL-GATED MOS FET AND 4-GANG TUNING CAPACITOR:

In the FM frontend of the SIX is a solid combination of solid state sophistication. It utilizes a low-noise MOS FET (metal oxide semiconductor field effect transistor) combined with three expensive silicon transistors and a 4-gang tuning capacitor for its important FM RF amplifier and mixer stage. The result of all this capability is outstanding crossmodulation distortion and image ratio characteristics, as good as you'll find in a receiver in this price range. Outstanding sensitivity of 2.0μV is another important characteristic of the SIX's frontend and the reason why its tuner section can pull in distant, weak stations with an unmatched clarity.

2 QUALITY FM IF AMPLIFIER WITH IC AND SIX CERAMIC FILTERS:

The heart of the SIX's tuner section, its IF amplifier, offers superb characteristics attained by the use of an IC embodying a 3-stage differential amplifier as well as six ceramic filters boasting excellent selectivity and cut-off characteristics. Quality specifications such as an IHF-rated selectivity of 60dB and capture ratio of 2.0dB are the result. You will also discover that distortion, separation and phase characteristics of the receiver are very near the top during FM stereo reception.

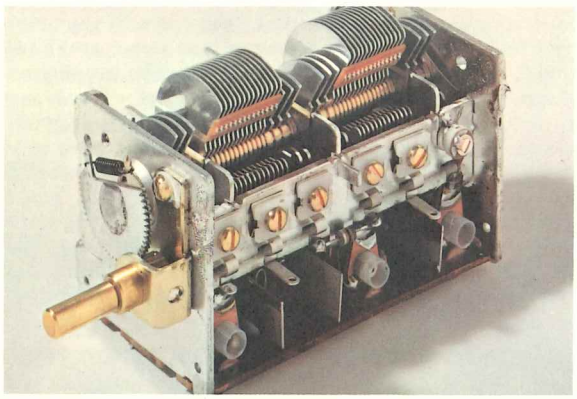


3 LINEAR WIDE FM SCALE:

Because Sansui has utilized a precision frequency-linear 4-gang tuning capacitor in the FM frontend, it has been possible to graduate the SIX's FM scale evenly in steps of 250kHz for easy, pinpoint tuning. This is a very wide dial, stretching from 88 to 108MHz for ease-of-tuning. As an additional bonus, the dial is made of scratch-proof, highly transparent smoked glass that turns to black when the receiver is utilized for other modes than radio reception. The dial pointer is the self-lighting type, easy-to-see; the dial is contained in an expensive die-cast aluminum frame.

4 MPX SWITCHING CIRCUIT WITH FOUR DIODES AND LC TYPE CARRIER LEAK FILTER:

The SIX employs a special adjustment-free LC type carrier leak filter with sharp cutoff characteristic. The importance of this circuit lies in its ability to deter beat interference and intermodulation distortion. Without the circuit, should the pilot signal contained in FM stereo signals leak into the output, the result would cause beat interference with the audio signals, or at best, lead to intermodulation distortion. It could also cause beat interference with the bias frequency of a tape recorder if the FM multiplex broadcast signal was to be recorded, thus preventing any quality in the recording. The sharp cutoff LC filter combats carrier leakage while making for reduced heat interference and intermodulation distortion.



5 FM MUTING SWITCH:

You'll use this switch to mute all annoying noise inherent in the FM wave that is perceived between stations as you turn the dial in search of your favorite station.

6 SIGNAL STRENGTH METER:

An extremely useful aid in pinpointing FM tuning accuracy is the signal strength meter, which indicates the strength of the broadcast signal as it arrives at your antenna.

7 300Ω AND 75Ω FM ANTENNA TERMINALS:

Fool-Proof one touch connection terminals are provided for connecting both regular 300Ω feeder cable FM antenna and the more powerful 75Ω coaxial cable. The latter is used to connect an outdoor FM antenna where broadcast stations are remote and noise is prevalent.

8 SENSITIVE AM TUNER:

AM reception hasn't taken a backseat in the overall design of the SIX. Constructed of an RF amplifier with a 2-gang tuning capacitor and an IF amplifier with a two-resonator ceramic filter, it delivers quality AM reception best evidenced by its sensitivity of 50dB/m (310μV/m) and selectivity of 25dB, $\pm$10kHz. Another feature is a special whistle filter employed to eliminate beat interference with neighboring stations at night.

9 TWO-STAGE AM AGC CIRCUIT FOR RF AND IF AMPS:

The important Automatic Gain Control circuit governs the AM RF and IF amplifiers to assure steady-level reception regardless of the strength of the broadcast signal. This means that even when you switch from a broadcast station in your neighborhood to one located hundreds of miles away, sound volume remains constant.

10 JUMBO SLIDE-OUT AM BAR ANTENNA:

The ferrite bar antenna used for the SIX's AM reception is the unique slide-out type that features a space-wound coil. The space winding effect increases the effective area of the antenna and allows it to pull in a wider area of reception.

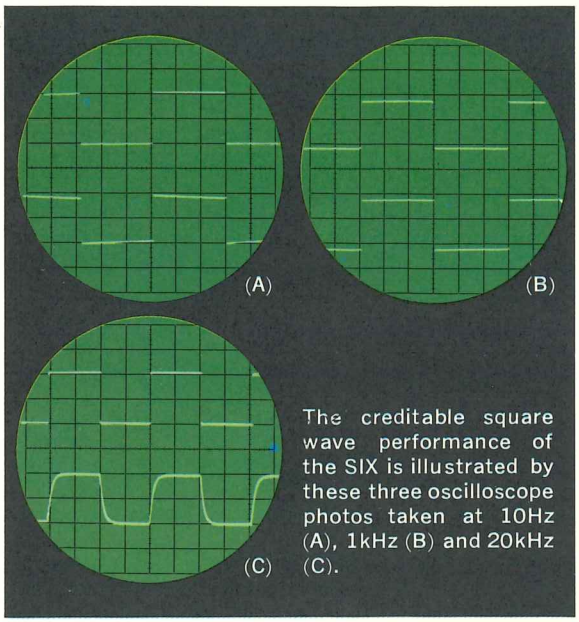
11 SMOOTH TUNING DIAL POINTER:

The tuning dial pointer moves smoothly thanks to the use of a large flywheel.

POWER AMPLIFIER SECTION

19 ALL-STAGE DIRECT-COUPLED OCL PURE COMPLEMENTARY CIRCUIT:

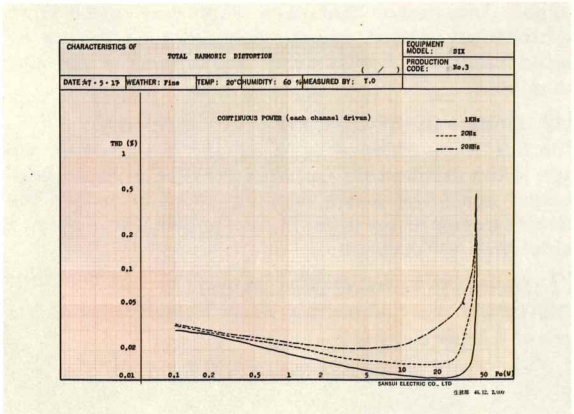
The SIX's power amplifier adopts an all-stage direct-coupled OCL circuit equipped with two (plus and minus) power supplies, and in the process does away with coupling capacitors and output capacitors. If you compare this circuit with the conventional power amplifier circuit using coupling capacitors between amplifying stages, you find that the SIX has distinct advantages in terms of reduced distortion and a wider power bandwidth. The absence of the output capacitors also prevents degradation of the amplifier damping factor and resultant deterioration of tone quality. The output stage of the power amplifier is a pure complementary circuit using NPN and PNP silicon transistors to achieve ideal phase inversion and keep both harmonic distortion and intermodulation distortion minimal at all output levels.

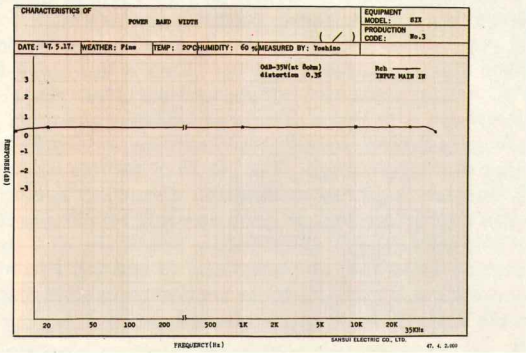


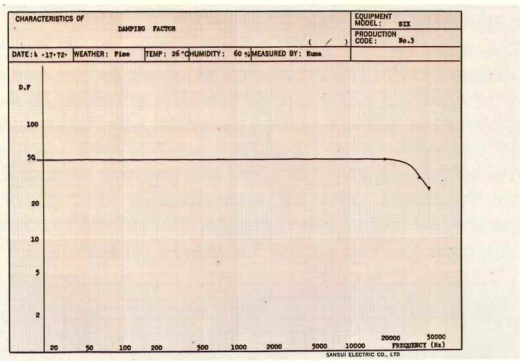
The creditable square wave performance of the SIX is illustrated by these three oscilloscope photos taken at 10Hz (A), 1kHz (B) and 20kHz (C).

20 DISTORTION-FREE CONSTANT-CURRENT DRIVER AMPLIFIER:

Crossover distortion and distortion often heard at low output levels have been eliminated in the SIX since the driver amplifier stage of the power amplifier is driven by a special constant current (high impedance) circuit. Thus, the loudness effect of the SIX is remarkably effective down to the very low output levels.







21 TWO 4,700μF POWER SUPPLY CAPACITORS:

The output stage of the power amplifier employs two huge 4,700μF capacitors. They are responsible for the power characteristics in the SIX, including music power of 130 watts at 4 ohms and continuous power of 39 watts per channel at 8 ohms, produced free of distortion with ample reserve power.

22 COMPLETE PROTECTION CIRCUIT:

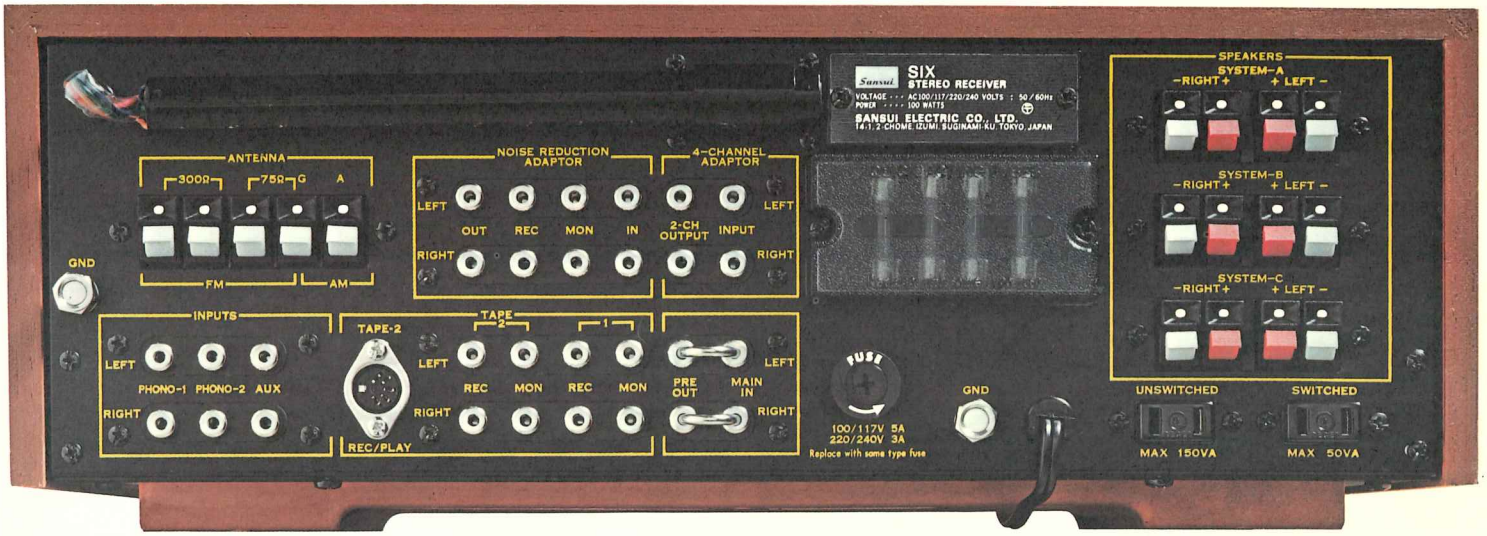
The stability and safety of a direct-coupled amplifier depends upon the effectiveness of temperature compensation and the stable operation of the driver-stage differential amplifier. Included in the SIX is a specialized transistor for temperature compensation and a stabilizing circuit used especially for the differential amplifier. In addition, four quick-acting fuses and a newly designed (patent pending) relay circuit are incorporated to protect abnormal current from flowing into your speakers in the event that the power transistor(s) are damaged. Once the abnormal condition is corrected, the relay circuit automatically restores itself. And then it also mutes the pop noise generated when the receiver is switched on or off.

23 JUMBO HEAT SINK:

Another feature of the SIX is its jumbo heat sink, which works to ensure the safety of the power transistors even when the amplifier is driven for its maximum power output.

OTHER FEATURES

Loudness Switch for enhanced liveliness at low listening levels; DIN connector socket to simplify connection of tape deck; two large grounding terminals; two convenient AC outlets to power other equipment (one is switched by receiver's power switch); headphone jack for private listening;connects three pairs of speaker systems, with Speaker Selector to choose between A, B, C, A+B, A+C and OFF; easy, foolproof one-touch terminals for connecting speaker systems and antennas.



SPECIFICATIONS

AUDIO SECTION

POWER OUTPUT

IHF MUSIC POWER		130 watts 4Ω at 1,000Hz 105 watts 8Ω at 1,000Hz
CONTINUOUS RMS POWER	(each channel driven)	48/48 watts 4Ω at 1,000Hz 39/39 watts 8Ω at 1,000Hz
CONTINUOUS RMS POWER	(both channels driven)	34+34 watts 8Ω at 1,000Hz
CONTINUOUS RMS POWER	(both channels driven at 20 to 20,000Hz)	28+28 watts 8Ω load
TOTAL HARMONIC DISTORTION		
POWER AMPLIFIER ONLY		less than 0.3% at rated output
PREAMP. ONLY	(PHONO to Pre output)	less than 0.2% at rated output
	(AUX to Pre output)	less than 0.1% at rated output
OVERALL	(AUX to Power output)	less than 0.3% at rated output
INTERMODULATION DISTORTION	(70Hz: 7,000Hz=4:1 SMPTE method)	
OVERALL	(AUX to Power output)	less than 0.3% at rated output
POWER AMPLIFIER ONLY		less than 0.3% at rated output
POWER BANDWIDTH	(IHF)	10 to 50,000Hz at 8Ω load
FREQUENCY RESPONSE		
POWER AMPLIFIER ONLY		15 to 40,000Hz+1dB, −1dB
OVERALL	(AUX to Power output)	20 to 40,000Hz+1dB, −1.5dB
EQUALIZATION RIAA CURVE		+1dB, −1dB (30 to 15,000Hz)
LOAD IMPEDANCE		4 to 16Ω
DAMPING FACTOR		approximately 40 at 8Ω load
CHANNEL SEPARATION		
	(at rated output 1,000Hz)	
POWER AMPLIFIER ONLY		better than 60dB
OVERALL	(from PHONO)	better than 50dB
	(from AUX)	better than 50dB
HUM and NOISE	(IHF)	
POWER AMPLIFIER ONLY		better than 90dB
OVERALL	(from PHONO)	better than 70dB
	(from AUX)	better than 80dB
INPUT SENSITIVITY and IMPEDANCE		
	(at rated output 1,000Hz)	
PHONO		2.5mV (50kΩ)
	Max. input capability	100mV at 0.5% distortion
AUX		150mV (50kΩ)
TAPE MONITOR		150mV (50kΩ)
N.R. ADAPTOR		150mV (50kΩ)
4-CH ADAPTOR		150mV (50kΩ)
POWER AMPLIFIER INPUT		800mV (50kΩ)
OUTPUT LEVEL		
TAPE MONITOR	(DIN)	30mV
	(Pin)	150mV
	(Phone type)	150mV
PREAMPLIFIER		800mV
	Max. output	4,000mV at 0.5% distortion
TONE CONTROLS		
BASS		+15dB, −15dB at 50Hz (3dB step)
TREBLE		+15dB, −15dB at 15,000Hz (3dB step)
FILTERS		
LOW		−10dB at 50Hz (12dB/oct.)
HIGH		−10dB at 10,000Hz (12dB/oct.)
LOUDNESS		+10dB at 50Hz, +8dB at 10,000Hz

TUNER SECTION

FM:

TUNING RANGE	88 to 108MHz
SENSITIVITY (IHF)	2μV
SIGNAL to NOISE RATIO	better than 63dB
IMAGE FREQUENCY REJECTION	better than 75dB at 98MHz
SPURIOUS RESPONSE REJECTION	better than 85dB at 98MHz
SELECTIVITY	better than 60dB
IF REJECTION	better than 85dB at 98MHz
CAPTURE RATIO (IHF)	2dB
SPURIOUS RADIATION	less than 34dB
TOTAL HARMONIC DISTORTION	
MONO	less than 0.3%
STEREO	less than 0.5%
STEREO SEPARATION	better than 35dB at 400Hz
FREQUENCY RESPONSE	30 to 12,000Hz+1dB, −2dB
ANTENNA INPUT IMPEDANCE	300Ω balanced, 75Ω unbalanced
AM:	
TUNING RANGE	535 to 1605kHz
SENSITIVITY (Bar Antenna)	50dB/m
SELECTIVITY	better than 25dB
IMAGE FREQUENCY REJECTION	better than 80dB/m at 1,000kHz
IF REJECTION	better than 80dB/m at 1,000kHz

GENERAL

SWITCHES and SELECTOR	
TAPE MONITOR 1, 2	OUT, IN
N.R. ADAPTOR	OUT, IN
4-CH ADAPTOR	OUT, IN
LOUDNESS	OFF, ON
FILTERS (HIGH LOW)	OFF, ON
MODE	STEREO, MONO
FM MUTING	ON, OFF
SPEAKERS	OFF, A, B, C, A+B, A+C
SELECTOR	PHONO-2, PHONO-1, FM AUTO, AM, AUX
SEMICONDUCTORS	Transistors:72, FET: 1, Diodes: 41, Zener Diodes: 4, IC: 1
POWER REQUIREMENTS	
POWER VOLTAGE	100, 117, 220, 240V, 50/60Hz
POWER CONSUMPTION	
Max.	280VA
Rated	100 Watts
DIMENSIONS	424mm (16¾″)W×140mm (5⁹⁄₁₆″)H ×315mm (12⅜″)D
WEIGHT	13.2kg (29.1 lbs.)

Design and specifications subject to change without notice for improvement.

SANSUI ELECTRIC CO., LTD. 14-1, 2-CHOME, IZUMI, SUGINAMI-KU, TOKYO 168, JAPAN/TELEPHONE: 323-1111/TELEX: 232-2076
SANSUI ELECTRONICS CORPORATION 55-11 QUEENS BLVD. WOODSIDE, NEW YORK 11377, U.S.A./TELEX: NEW YORK 422633 SEC UI
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